**Multiplying Exponents**

Exponents with the same base can be multiplied. For example, we can multiply, but we can’t multiply .

Let’s look at an example: .

What we’re doing here is we’re taking , which can also be written as , and multiplying it by , which can also be written as .

So, we have , which can be re-written as  • . Another way to write this is . Therefore,  = 

**The Shortcut:** Take a look at our original problem and our final answer: . How can we use the exponents in the original problem to get the exponent in our answer? If we add 2 and 5, we get 7.

Therefore, **when we are multiplying exponents with the same base, we can simply keep the same base and ADD the exponents.**

**Example:**  🡪 It’s ok if you get a negative exponent!

**What if we have more than one variable in the problem?**

**Example:** . This problem can also be written as .

This problem follows the same steps we discussed above. We can still only multiply the exponents that have the same base. Therefore, we can multiply , , and . We do this separately as seen below:

 = 12





Then, we combine everything to get our answer: 

